BEFORE THE
POSTAL REGULATORY COMMISSION
WASHINGTON, D.C. 20268-0001

MAIL PROCESSING NETWORK RATIONALIZATION SERVICE CHANGES, 2011	Docket No. N2012-1

RESPONSES OF UNITED STATES POSTAL SERVICE
WITNESS EMILY ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORIES
PR/USPS-T3-17 THROUGH 27

The United States Postal Service hereby files the responses of witness

Emily Rosenberg to the above-listed interrogatories of the Public Representative dated

February 2, 2012. Each interrogatory is stated verbatim and followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

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**RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORY**

PR/USPS-T3-17

Please refer to page 2 of your testimony where you state: "Moreover, most DBCS equipment is utilized for DPS only. Since DCBS is only used during this window, DBCS machines are idle the remaining hours of each operating day. This downtime creates unused capacity in the network which can only be reduced through the relaxation of service standards (and corresponding relaxation of the four-hour DPS processing window". Please also refer to pages 12 and 22 of your testimony where you state: "Delivery Point Sequencing was assigned a 16 hour window"; and "In the future operating environment, the DBCS will be operating 20 hours a day with the remaining 4 hours dedicated to preventive maintenance," respectively.

a.   Please provide definitions for 'idle time' and 'down time' as used in your testimony.
b.   Please provide calculations supporting the assignment of a 16 hour DPS window.
c.   Please confirm that the longer DPS processing window is the basis for the increased DPS equipment utilization. If not confirmed, please explain.

RESPONSE:

(a)   For purposes of my testimony, I use the terms "down-time" and "idle-time" interchangeably. I recognize that "down-time" is otherwise commonly used to refer to when a machine is unavailable during an operational run due to maintenance event and that "idle-time" is commonly used to refer to when a machine is not running during an operational run, but is available to do so.

(b)   There are no supporting calculations for the sixteen hour run-time. Through discussions with subject matter experts and management, it was deemed that DPS should ordinarily begin no earlier than 12:00 PM and end at 04:00 am.

(c)   Not confirmed. The longer DPS window is the basis for increased DBCS equipment utilization. DPS is only one of the processes run on DBCS machines.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORY

PR/USPS-T3-18

Please refer to page 5 of your testimony where you state: "The Microsoft Excel scoring tool takes a very general approach that allows the Postal Service to find efficiencies across many different mail processing operations, as well as transportation. The tool can be viewed as a giant calculator. It iterates through a combination of assumptions and outputs the final feasible computations into another worksheet that allows the modeler to compare several scenarios at once. " Please also refer to USPS-LR-N2012-1/14, Worksheet 'Assumptions'.

a.   Please define and explain the Hubbing workrate (min/truck/person) and provide the source for the value of '30' given in the table 'General'.
b.   Please, provide the source for the value of '302,400' letters per tray/truck given in the table 'General'.
c.   Please provide the source or calculation for the 'minimum cost per trip to anywhere' value set a '$100,000' in the table 'General'.
d.   The 'transportation cost' in the scoring tool is set to $1.80. In response to APWU/USPS-T3-9 you state that based on Highway Contract Route data the number was revised to $1.82 per mile (see also your testimony, page 16, line 6. Please explain how a change, in the scoring tool inputs, from $1.80 to $1.82 would influence the results of the calculations.
e.   Please define Flats/SPBS space multiplier and provide the source or calculations for the value of '2.3333' in the table 'General'.
f.   Please define the term 'ADV' as used in the table 'Volume'.
g.   Please explain why the term '% Vol Change' is set to 100% in table 'Volume'.
h.   Please explain why the machine efficiency is a constant 80% for each operation listed, including any supporting calculations or data used to derive the figure.

RESPONSE:

(a)   The field Hubbing workrate (min/truck/person) is used to penalize time by 30 minutes for the use of a hub. The 30 minutes was deemed an appropriate time penalty based on discussions with mail processing and transportation management experts. There was no formal analysis performed to calculate this value.

(b)   '302,400' letters per tray/truck is calculated by making the following assumptions: 24 APCs of letters per truck (1/2 the 53'truck is other mail), 350 Letters per tray,36 letter trays per APC; 24 * 350 * 36 = 302,400 letters per truck.

(c)   Minimum cost per trip to anywhere is set to $100 not, $100,000. This was set to scale

transportation to baseline.

(d)   Changing the per trip minimum from $1.80 to $1.82 would make transportation more

expensive. This analysis was not run, since the scoring tool was the starting point for

discussion only. The tool results were modified to align with external network

infrastructure.

(e)   The scoring tool was focused on letter processing. The Flats/SPBS space multiplier of

2.33 was used to inflate the average footprint on the tab entitled, "Calculations ", in

cells F27, F29:F34. As the future processing nodes can process more than just the

letter product and thus would need to house equipment to sort the other products. It

was a rough estimate to proxy the footprints of AFSM100 and SPBS compared to that

of letter automation equipment.

(f)   ADV stands for average daily volume. For the scoring tool, the annual volume was

divided by 302, the number of operating days in a non-leap year.

(g)   The scoring tool was built to have the flexibility to run at varying volume levels. This

flexibility was not utilized. The volume impacts the equipment requirement. For

example, see tab entitled Calculations, Cell I8. The formula in this cell calls the

%volume for cancellation (Assumptions!J32) is used to inflate/deflate the cancellation

machines based on the factor.

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TO PUBLIC REPRESENTATIVE INTERROGATORY**

<u>**RESPONSE to PR/USPS-T3-18 (continued)**</u>

(h)   Machine factor is set at 80 percent. This factor is used in the calculations of machines required (such as cell I8) and the total daily labor cost (such as cell P8) on the "Calculations" tab. This value is based on discussions with mail processing management experts; there was no formal analysis performed to calculate it.

**RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORY**

PR/USPS-T3-19

The following questions refer to the terms used in USPS-LR-14, 14_Mail Processing Window Scoring Tool.xls, worksheets "Calculations" and "Time."

a.   Please explain why throughput times machine efficiency is used to calculate the total number of machines rather than TPF/hr.

b.   Please confirm that "daily workhours" is equal to daily workhours per facility. If not confirmed, please explain.

c.   Please refer to Cell N8. Please define the term "Coverage" as used in this worksheet.

d.   Please confirm that "throughput" is a measure of the ideal or maximum pieces that could be processed by a machine. If not confirmed, please provide an alternate definition.

e.   Please explain why the calculations for the number of required machines for different operations, are in large part determined by throughput, rather than a historical measure such as total pieces fed per hour. Please explain the purpose and function of the worksheet "TIME."

RESPONSE:

(a)   TPF/hr is one way to calculate a throughput, but it is not recommended. Total pieces fed includes rejected pieces. Using this piece count, may misrepresent the machine capability. Due to changes in operating windows, the wall-clock throughputs achieved today may differ than those tomorrow. The average daily volume is based on the total piece handled. For modeling, we did not want to include the reworked or rejected volume. The TPH represents the number of handlings necessary to distribute each piece of mail from the time of receipt to dispatch. The formula for total machines is in I8 though I12 on the calculation tab. To explain the calculation, I will use the formula in I8.

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RESPONSE to PR/USPS-T3-19 (continued)

(=ROUNDUP((Assumptions!I32*Assumptions!J32)/((G8-C8)*24*Assumptions!K32*Assumptions!L32),0)

Where

Assumptions!I32=average daily volume for cancellation

Assumptions!J32=volume inflation factor; set to 100% such that the volume used is 100% of FY2010 ADV.

(G8-C8)*24=Operating Window =Clearance Time – Start Time

Assumptions!K32=throughput for cancellation equipment pieces/ hour

Assumptions!L32=machine efficiency ; provide flexibility to deflate thoughput.

(b)   Confirmed.

(c)   On page 6 of my testimony, I state "Fiscal Year 2010 Management Operating Data System (MODS) workload was spread evenly across the 3,119,884.69 square miles". Given this, N8 shows the reach of each node. It is calculated based on the distance between collections to cancellation site. Using this distance, the number of nodes required can be determined.

(d)   Not confirmed. It is a reasonable expectation of the pieces that can be processed per hour.

(e)   See my response to part (a).

RESPONSE to PR/USPS-T3-19 (continued)

(f)   TIME is used to determine if there are competing windows.

For example, DBCS is used for both Process Step A and Process Step B.

SCENARIO I:

Let Process Step A require 3 DBCS for time periods 1, 2, and 3.

Let Process Step B require 10 DBCS for time periods 3, 4, and 5.

During time period 3, 13 DBCS are required to sort the mail for both Step A and B.

SCENARIO II:

Let Step A require 3 DBCS for time periods 1, 2, and 3.

Let Step B require 10 DBCS for time periods 4, 5, and 6.

Since there is no overlap, only 10 DBCS are required to sort the mail for both Step A

and Step B.

The TIME workbook evaluates the overlap of operating window to determine if the total

equipment required is the sum of the equipment requirement for each process step (as

shown in scenario I) or if the total equipment requirement is the maximum required for

either process step (as shown in scenario II). This analysis is performed for each type

of equipment modeled.

**RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORY**

PR/USPS-T3-20

Please refer to USPS-LR-15, 15_LogicNet Model.xls, Sheet: "OverallCapacity."

a.   Please explain the meaning of column "L", Fixed Opening Cost.

b.   Please explain how and/or where the data was developed or obtained for each plant.

 c.   Please explain why column "M", Fixed Operating Cost, is set to zero for each plant.

RESPONSE

(a)   Fixed Opening Cost on Overall Capacity is the cost of opening the line, i.e. the cost to start processing the products volume at that site, whether it is one piece or one thousand pieces.

(b)   See the response to POIR No. 1 Question 6.

(c)   This function was not used in our model and thus the default value was not changed.

**RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORY**

PR/USPS-T3-21

Please refer to USPS-LR-15, 15_LogicNet Model.xls, Sheet: "Demand."

a.   Please explain the meaning of Demand, Minimum Demand, and Revenue (columns G, H, and I).

b.   Please explain the units in which these variables are expressed.

c.   Please explain how and/or where the data was developed or obtained for each plant.

d.   Please explain how these variables are used in the LogicNet model analysis.

RESPONSE:

(a)   Definitions:

Demand: Square footage required by 3-Digit ZIP Code and product to process its

volume.

Minimum Demand: This builds constraints in the Logic Net heuristic. For logic Net to

provide a feasible solution, minimum amount of demand parameter needs to be met in

the solution otherwise LogicNet deems the solution infeasible. In our modeling

minimum demand equals demand, thus all demand must be met.

Revenue: The $ per unit of demand met. Given, we do cost minimization, revenue is

not utilized.

(b)   A unit of demand is a square foot.

(c)   Demand is created by 3-digit ZIP Code, not by plant. See footnote 20 of my testimony

for detailed description of how this is calculated.

RESPONSE to PR/USPS-T3-21 (continued)

(d)   For our modeling concept, all demand must be met (minimum demand equals

demand). LogicNet assigns the customers (3-digit ZIP Codes) to plants. For modeling

purposes, the plants capacity its square footage. LogicNet assigns the 3-digit ZIP

Codes to plants to find the least cost solution based on the constraints. As stated in A,

revenue is not used in this analysis.

**RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORY**

PR/USPS-T3-22
Please refer to your testimony on page 7, footnote 6 and USPS-NP2012-1/LR 35.
a.   Please confirm that 'leg of transportation' as used in the footnote has the same meaning as mode of transportation. If not confirmed, please define leg of transportation.
b.   Please provide the query that returns 19,636 Post Office collection to cancellation processing site trips as well as the query that returns 18,022 destination processing plant to delivery unit trips as reported in the TCSS table.
c.   Please provide a library reference with the data from the Enterprise Data Warehouse that is used for calculations referred to in your testimony.

RESPONSE

(a)   Since the term "leg of transportation" does not appear in that footnote, I am not certain

how to respond to this question.

(b)   The queries have not been preserved. The general constraints applied are described

in footnote 6 page 7.

Code that will provide similar, but not exact results is as follows:

Sample code for C2C:
TCSS.n_conid AS Route, TCSS.n_trip AS Trip
FROM TCSS
WHERE (((TCSS.n_lv_time)>"12:25" And (TCSS.n_lv_time)<"21:00") AND
((TCSS.n_freq_rate)>203) AND ((IsNumeric([TCSS]![n_d_nass_code]))=True) AND
((Len([n_o_nass_code]))=5) AND ((Len([n_D_nass_code]))=3) AND
((IsNumeric([TCSS]![n_o_nass_code]))=True))
GROUP BY TCSS.n_conid, TCSS.n_trip;

SELECT Test_qryC2C.Route, Test_qryC2C.Trip, TCSS.n_o_nass_code
FROM Test_qryC2C INNER JOIN TCSS ON (Test_qryC2C.Route = TCSS.n_conid)
AND (Test_qryC2C.Trip = TCSS.n_trip)
WHERE (((IsNumeric([TCSS]![n_o_nass_code]))=True) AND
((Len([n_o_nass_code]))=5))
GROUP BY Test_qryC2C.Route, Test_qryC2C.Trip, TCSS.n_o_nass_code;

SELECT qry_C2COriginNassCode.n_o_nass_code
FROM qry_C2COriginNassCode
GROUP BY qry_C2COriginNassCode.n_o_nass_code;

**RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
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RESPONSE to PR/USPS-T3-22 (continued)

Sample code for D2D:

```
SELECT TCSS.n_conid AS Route, TCSS.n_trip AS Trip
FROM TCSS
WHERE (((TCSS.n_freq_rate)>203) AND ((TCSS.n_lv_time)>"03:00" And
(TCSS.n_lv_time)<"09:00") AND ((Len([n_o_nass_code]))=3) AND
((Len([n_D_nass_code]))=5) AND ((IsNumeric([TCSS]![n_d_nass_code]))=True) AND
((IsNumeric([TCSS]![n_o_nass_code]))=True))
GROUP BY TCSS.n_conid, TCSS.n_trip;

SELECT TCSS.n_d_nass_code, Test_qryD2D.Route, Test_qryD2D.Trip
FROM Test_qryD2D INNER JOIN TCSS ON (Test_qryD2D.Trip = TCSS.n_trip) AND
(Test_qryD2D.Route = TCSS.n_conid)
WHERE (((IsNumeric([TCSS]![n_d_nass_code]))=True) AND
((Len([n_d_nass_code]))=5))
GROUP BY TCSS.n_d_nass_code, Test_qryD2D.Route, Test_qryD2D.Trip;

SELECT qry_D2DDestNassCode.n_d_nass_code
FROM qry_D2DDestNassCode
GROUP BY qry_D2DDestNassCode.n_d_nass_code;
```

(c)   Library Reference 35 contains the data used for the analysis. The Enterprise

Data Warehouse information was not saved as it was simply used as quick validation

of the TCSS analysis.

**RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORY**

PR/USPS-T3-23
Please refer to page 8, footnote 7 of your testimony where you state: "The distance of 66 miles was determined by analyzing distance thresholds based on a sensitivity analysis for minimum building size, the minimum trip cost, and tour length". Please provide a library reference with the data and calculations underlying the sensitivity analysis.

RESPONSE

Documentation reflecting the underlying data and calculations has not been preserved.

**RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORY**

PR/USPS-T3-24
Please refer to page 13 of your testimony where you state: "For purposes of modeling, I assumed that each 3-digit ZIP Code workload could be transported up to 200 miles to be processed by a plant".
a.   What is the current average distance to a processing plant that 3-digit ZIP Code workload is transported? Please provide data with a source.
b.   Please, explain the derivation of the 200 mile assumption.

RESPONSE

(a)   The current average distance of 55.4 miles is calculated using PC Miler based on the

latitude and longitude of 3-digit ZIP Code's geographic centroid to latitude and

longitude of the SCF processing facility (Labeling list L005).

(b)   The 200 mile threshold was established based on discussions with postal mail

processing and transportation management experts. 200 miles is approximately 4

hours drive time. Assuming completion of mail processing at 4:00 AM, this would

allow mail to reach the delivery office by approximately 8:00 AM. In addition, as the

operating concept evolved, local postal management expert insight led to the

understanding that some volumes could be completed much earlier than the 04:00 AM

time, and therefore, could travel greater than the 4 hour drive time, which is why in

some instances, this distance constraint was relaxed. This was a reasonable distance

constraint to serve as a starting point to generate the network for further local

management insight and analysis.

**RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORY**

PR/USPS-T3-25
On page 14 of your testimony you state: "The Logic Net model included 476 plants as potential processing sites. Those with no workload or no equipment were removed as potential processing sites." Please confirm that all existing plants, except those with no workload or no equipment, were included in the model. If not confirmed, please provide the percentage of plants (of the total processing plants) included in the model and explain how the sample was chosen.

RESPONSE

Not confirmed. The starting point was the L005 SCF label list published at the time of

modeling. We also excluded plants that are not located on the contiguous United States, i.e.

off-shore facilities were not modeled in LogicNet. See the response to APWU/USPS-T3-20

for additional information.

**RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORY**

PR/USPS-T3-26
Please refer to page 16 of your testimony where you state: "A fixed component of $100 was added to each 3-digit ZIP Code for plant lane. This fixed cost was added in to reflect more accurately the cost of local transportation. There is a fixed cost for each trip. Based on Logic Net's transportation cost algorithm, the $100 per lane assumption most accurately represented the current ratio of transportation cost to mail processing costs". Also in response to APWU/USPS-T3-9 you state: "Test models were run with varying transportation fixed costs. The $100 per plant lane was determined as the total costs more accurately estimated the ratio of transportation to mail processing costs".

Please provide a library reference with supporting calculations/tests/models that support the fixed component of $100.

RESPONSE

The sensitivities were performed within LogicNet, but the results were overwritten during

each iteration until a final decision was made. Accordingly, the analysis has not been

preserved.

**RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS ROSENBERG
TO PUBLIC REPRESENTATIVE INTERROGATORY**

PR/USPS-T3-27

Please refer to page 18 of your testimony where you state: "For this strategic initiative, USPS Handbook AS-504, Space Requirements equipment square footage (which includes space for aisles and staging) was inflated by an additional twenty percent to ensure there was adequate staging room under this new concept when all volume is available at the start of the windows". Please also refer to the same page where father state: "The Model column is the AS-504 equipment square footage multiplied by an additional 25 percent used in our modeling to account for the additional staging space required under this new mail processing concept". Please provide calculations/ sources in support of 20 and 25 per cent values.

RESPONSE

The square foot inflation factor was used as a proxy for staging in the initial node selection.

The LogicNet model was used as starting point for discussion. The decision to increase the

inflation factor in the post-analysis was to flag any nodes that may have space constraints.

Staging requirements under today's operating environment will be different than the staging

requirements under Network Rationalization. Discussion with mail process management

experts helped refine these initial assumptions. No calculations were performed to develop

this assumption.

As stated in footnote 25, "As part of the specification for each site, a blueprint will be

generated for each node to ensure appropriate staging and dock space exists. The building

layout is one of the criteria for review and approval of each Area Mail Processing

consolidation study."